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CAREER INSTITUTE
KOTA (RAJASTHAN)
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Target : Stage – I

QUESTION BANK

HOMI BHABHA
Young Scientist Exam

BIOLOGY

CLASS : IX

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ALLEN CAREER INSTITUTE KOTA (RAJASTHAN)

CONTENTS

BIOLOGY

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1. HEREDITY, VARIATION AND EVOLUTION, GENETIC DISORDERS AND CHROMOSOMAL ABERRATIONS

1. The innate tendency of offspring to resemble their parents is called
(1) variation (2) heredity
(3) inheritance (4) resemblance

2. The tendency of offspring to differ from parents is called
(1) variation (2) heredity
(3) inheritance (4) resemblance

3. Who is regarded as the father of genetics?
(1) Bateson (2) Morgan
(3) Mendel (4) Watson

4. Mendel's experimental material was
(1) *Pisum sativum* (2) *Lathyrus odaratus*
(3) *Oryza sativa* (4) *Mirabilis jalapa*

5. Mendel presented his works in
(1) Natural History Society in Russia
(2) Natural History Society in America
(3) Natural History Society in Brunn
(4) Natural History Society in Germany

6. Mendel's findings were rediscovered by
(1) De Vries (2) Correns
(3) Tschermak (4) All of the above

7. The physical expression or appearance of a character is called as
(1) morphology (2) genotype
(3) phenotype (4) ecotype

8. Genotype is
(1) all the genes in an organism
(2) genetic constitution of the phenotype
(3) trait expressed
(4) expressed genes

9. The alternate forms of a gene is called
(1) recessive character
(2) dominant character
(3) alleles
(4) alternative gene

10. If the genotype consists of only one type of allele. It is called
(1) homozygous (2) hetrozygous
(3) monoallelic (4) uniallelic

11. The number of types of gametes produced by a homozygous individual is
(1) 1 (2) 2
(3) 3 (4) many

12. If different alleles are present in a genotype then it is called
(1) homozygous (2) heterozygous
(3) diallelic (4) polyallelic

13. During his experiments, Mendel called genes by the term
(1) factors (2) traits
(3) characters (4) qualities

14. The number of types of gametes produced by a heterozygous individual is
(1) 1 (2) 2
(3) 3 (4) many

15. Acrocentric chromosome looks like the English letter
(1) V (2) J
(3) L (4) I

16. Number of characters studied by Mendel in Pea was
(1) 5 (2) 7
(3) 6 (4) 4

17. The cross in which parents show 2 pairs of contrasting characters is called a
(1) Monohybrid cross
(2) dihybrid cross
(3) trihybrid cross
(4) tetrahybrid cross

18. Which of the following is totally impossible outcome of Mendel's Experiment?
(1) 3 tall 1 short plant
(2) 24 tall and 8 short plants
(3) 8 tall and 0 short plants
(4) 4 tall plants and 1 medium height plant.

19. Which section of DNA provides information for one protein?
(1) Nucleus (2) Chromosomes
(3) Trait (4) Gene

20. Find the odd one out:
(1) Haemophilia (2) Eye colour
(3) Skin colour (4) Shape of lips

21. Chromosome number of a crab is
(1) 200 (2) 20
(3) 4 (4) 48

22. Which of these is homozygous recessive?
(1) Ss (2) ss
(3) SS (4) s

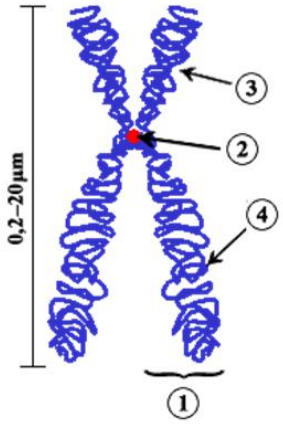
23. The component of a chromosome that controls heredity is ____.
(1) proteins (2) histones
(3) DNA (4) RNA

24. Number of chromosomes in a human male is _____.
(1) 23 (2) 23 pairs
(3) 22 pairs + XY (4) 22 pairs

25. In DNA, Cytosine pairs with
(1) Thymine (2) Guanine
(3) Uracil (4) Adenine

26. Which of these is a pyrimidine?
(1) Adenine (2) Guanine
(3) Cytosine (4) adenosine

27. Identify 2 in the structure given below:



(1) Arm (2) DNA
(3) Centromere (4) Gene

28. Down's syndrome is caused by
(1) Monosomy of 21st chromosome
(2) Disomy of 21st chromosome
(3) Trisomy of 21st chromosome
(4) An extra chromosome in female

29. DNA was discovered in 1869 by
(1) Frederick Steward
(2) Frederick Meischer
(3) Hershey and Chase
(4) Watson and Crick

30. ---------- method is useful to identify the lineage of a person.
(1) Animal tissue culture
(2) Gene mapping
(3) DNA sequencing
(4) DNA fingerprinting

31. Which of these is a recessive characteristic among human beings?
(1) Rolling tongue
(2) Presence of hair on arms
(3) Attached earlobe
(4) Black, curly hair

32. Which of these is a dominant character in *Pisum sativum*, used by Mendel for his experiments?
(1) Axillary flowers (2) Dwarf plant
(3) Constricted pod (4) Green seeds

33. Transmission of characters from parents to offsprings is called
(1) Recombinatioin (2) Heredity
(3) Variation (4) Mutation

34. F1 generation means
(1) First filial generation
(2) First fertile generation
(3) First flowering generation
(4) First seed generation

35. Mental retardation, flat nose, horizontal crease on palm are symptoms of
(1) Turner's syndrome
(2) Patau's syndrome
(3) Klinefelter's syndrome
(4) Down's syndrome

36. Turner syndrome is also referred to as
(1) Trisomy of 21st chromosome
(2) Monosomy of X chromosome .
(3) Trisomy 13
(4) 5p minus syndrome

37. "Solubility test" is done to diagnose
(1) Pernicious anaemia
(2) Thalassemia
(3) Fanconi anemia
(4) Sickle cell anemia

38. The genetic disorder due to absence of melanin is called
(1) Albinism
(2) Leucoderma
(3) Hay- Wells syndrome
(4) Eczema

39. Which of these is a carrier of Sickle-cell anaemia?
(1) AA (2) SS
(3) AS (4) None of these

40. Find the odd one out:
(1) Tay Sach's disease
(2) Hutchinson's disease
(3) Phenylketonuria
(4) Asthma

41. First record of human like animal was found in
(1) East Africa (2) Asia
(3) Australia (4) Europe

42. If a parent cell has 30 chromosomes then after mitosis the daughter cells each will have
(1) 60 chromosomes (2) 15 chromosomes
(3) 120 chromosomes (4) 30 chromosomes

43. If an organ is used, it gets developed and if an organ is not used, it gets reduced. It was given by
(1) Darwin (2) De Vries
(3) Lamarck (4) Miller

44. A basket of vegetables contains carrot, potato, radish and tomato. Which of them represent the correct homologous structures ?
(1) Carrot and Potato
(2) Carrot and Tomato
(3) Radish and Carrot
(4) Radish and Potato

45. Which of these pairs is vestigial ?
(1) Coccyx and pinna muscles
(2) Coccyx and premolar
(3) Facial hair in ladies
(4) Coccyx and intercostal muscles

46. 'Central dogma' is represented as
(1) DNA → RNA → proteins
(2) RNA → DNA → proteins
(3) Proteins → RNA → DNA
(4) Proteins → DNA → RNA

47. Code for each amino acid consists of
(1) Two nucleotides (2) Three nucleotides
(3) Four nucleotides (4) Five nucleotides

48. The process of copying genetic information from one strand of DNA to RNA is termed as_____.
(1) replication (2) transcription
(3) translation (4) reverse transcription

49. The most apparent change during the evolutionary history of *Homo sapiens* is traced in
(1) loss of body hair
(2) walking upright
(3) shortening of the jaws
(4) remarkable increase in the brain size

50. First example of wise-man
(1) Neanderthal man (2) Cro magnon man
(3) Australopithecus (4) Ramapithecus

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	2	1	3	1	3	4	3	2	3	1
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	1	2	1	2	2	2	2	4	4	1
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	1	2	3	3	2	3	3	3	2	4
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	3	1	2	1	4	2	4	1	3	4
Q.	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
A.	1	4	3	3	1	1	2	2	4	1

2. NUTRITION, RESPIRATION, TRANSPORTATION IN PLANTS AND ANIMAL

1. Which of the following are autotrophic organisms?
(1) Blue green algae (2) Cyanobacteria
(3) *Ferrobacillus* (4) All of the above

2. Which of the following energy change occurs during photosynthesis?
(1) Light to chemical (2) Chemical to light
(3) Light to molecular (4) Heat to chemical

3. Thylakoid are the part of :
(1) Mitochondria (2) Golgi bodies
(3) Chloroplast (4) Endoplasmic reticulum

4. Observe the internal structure of a dicot leaf. Which group of cells are mainly responsible for photosynthesis?

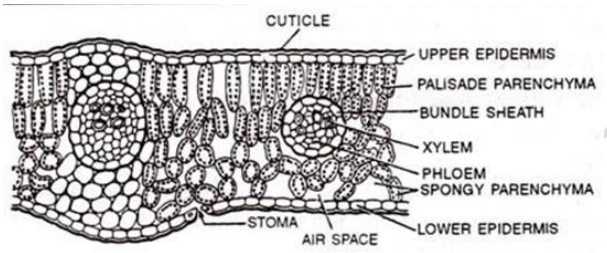


Figure Detailed structure of a part of T.S. of dicot leaf.

(1) Upper epidermis
(2) Palisade parenchyma
(3) Spongy parenchyma
(4) Both 2 & 3

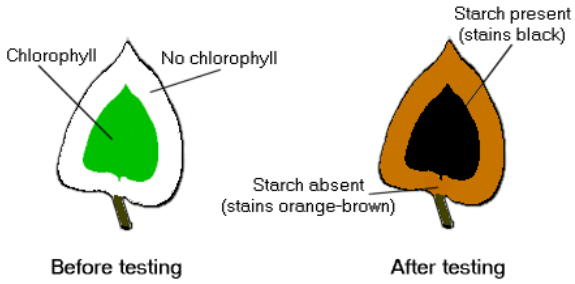
5. Which of the following is NOT the by-product of photosynthesis ?
(1) Glucose (2) Oxygen
(3) Both (1) & (2) (4) None of the above

6. The rate of photosynthesis is NOT affected by:
(1) Light intensity
(2) Humidity
(3) Temperature
(4) Carbon dioxide concentration.

7. The production of starch, and not glucose is used as a measure of photosynthesis in leaves because:
(1) Starch is immediate product of photosynthesis
(2) Glucose formed is soon converted into starch
(3) Starch is soluble in water
(4) Sugar can't be tested.

8. A plant is kept in dark cupboard for about 48 hours before conducting any experiment on photosynthesis in order to:
(1) Remove chlorophyll from leaves
(2) Remove starch from leaves
(3) Ensure that no photosynthesis takes place
(4) Provide rest to the plant.

9. What conclusion can be made by studying the result of the following experiment?



(1) Sunlight is needed for photosynthesis
(2) Chlorophyll is needed for photosynthesis
(3) Iodine solution is used to test starch
(4) Both (1) & (2)

10. Which of the following colour of light is NOT absorbed by chlorophyll?
(1) Red and blue
(2) Yellow and orange
(3) Green
(4) None of the above.

11. Find the incorrect pair:
(1) Lion-Holozoic mode of nutrition.
(2) Rat- Ingestive nutrition
(3) Cuscuta-Saprophytic mode of nutrition
(4) Tapeworms-Parasitic mode of nutrition.

12. Which of the following organ is NOT the part of human digestive tract ?
(1) Liver (2) Salivary gland
(3) Small intestine (4) Both 1 & 2

13. The structure which prevents the entry of food into wind pipe during swallowing in mammals is-
(1) Larynx (2) Glottis
(3) Epiglottis (4) Pharynx

14. The hardest constituent of tooth is -
(1) Enamel (2) Dentine
(3) Bone (4) Pulp.

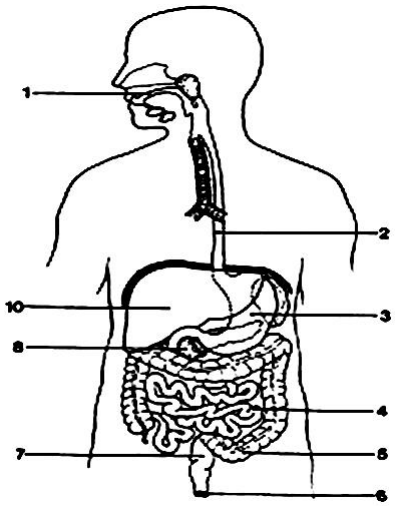
15. Which of the following statement is FALSE with respect to digestive system of ruminants?
(1) Stomach is four chambered.
(2) Length of alimentary canal is shorter as compared to human's alimentary canal.
(3) The partially digested food stored in stomach is called cud.
(4) Ruminants have functional caecum between small & large intestine.

16. Ptyalin is secreted by-
(1) Stomach (2) Salivary gland
(3) Pancreas (4) Bile

17. Emulsification of fats by bile takes place in-
(1) Duodenum (2) Liver
(3) Stomach (4) Large intestine

18. Observe the figure given below . Digestion of Protein begins in A and ends in B.

Identify A and B.



	A	B
(1)	1	4
(2)	1	5
(3)	10	7
(4)	3	4

19. If for some reason, the pancreas is removed from your body, then digestion of which of the following food item will not take place well?

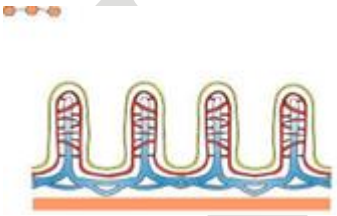
(1) Rice, butter paratha, salad.

(2) Butter paratha, salad, dal

(3) Rice, butter paratha, dal.

(4) Butter paratha only.

20. The following structure is present in which part of our digestive system and what is its main function?



(1) Stomach- helps in digestion

(2) Tongue- helps in detecting taste

(3) Small intestine- helps in absorption

(4) Large intestine- helps in defecation

21. In terrestrial plant gaseous exchange occurs through:

(1) stomata (2) lenticels

(3) young root hairs (4) all of these

22. It is advisable not to sleep under the trees at night. Because –

(1) Trees will release carbon dioxide

(2) Trees will take in oxygen

(3) Both 1 & 2

(4) Trees will take in carbon dioxide for photosynthesis.

23. Which of the following statement is NOT true ?

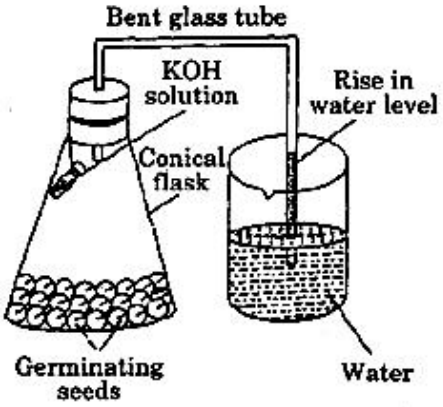
(1) Oxygen enters into the plant through stomata by diffusion.

(2) Rate of photosynthesis is more as compared to respiration during day time.

(3) Under anaerobic condition plant cells respire to produce alcohol

(4) None of the above.

Observe the following experimental set-up and answer the following questions:



24. What is the use of KOH solution?

(1) It will release oxygen.

(2) It will absorb oxygen.

(3) It will release carbon dioxide.

(4) It will absorb carbondioxide.

25. Why do we observe the rise of the water level in the glass tube?

(1) Due to absorption of carbon dioxide by KOH solution.

(2) Due to addition of carbon dioxide in the water.

(3) Both 1 & 2.

(4) None of the above.

26. The simplest respiratory organ is:

(1) Gills (2) Contractile vacuole

(3) Skin (4) lungs

27. Match the column:

	Column 1		Column 2
i	Body surface	a	Earthworm
ii	Moist skin	b	Insects
iii	Tracheal tubes	c	Birds
iv	Lungs	d	Flatworms

(1) i-d, ii-c, iii-b, iv- a (2) i-d, ii-a, iii-b, iv- c

(3) i-d, ii-a, iii-c, iv-b (4) i-d,ii-b, iii-a, iv-c

28. Match the column:

Column 1		Column 2	
a	Larynx	p	Lid of glottis
b	Trachea	q	Air sac
c	Alveoli	r	Voice box
d	Epiglottis	s	Wind pipe
		t	Common passage

(1) a-r, b-s, c-q, d-p (2) a-t, b-s, c-p, d-q

(3) a-r, b-s, c-q, d-t (4) a-r, b-t, c-q, d-p

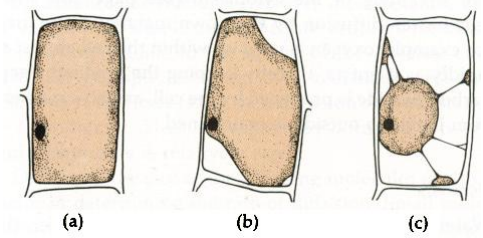
29. Which instrument helps in clinical assessment of pulmonary volumes?
(1) Sphygmomanometer
(2) Stethoscope
(3) Electrocardiograph
(4) Spirometer

30. If a man from sea coast goes to Everest peak then-
(1) His breathing & heart beat will increase
(2) His breathing & heart beat will decrease
(3) His respiratory rate will decrease
(4) His heart beat will decrease

31. Stomata: Transpiration: : Hydathode: _____
(1) Guttation (2) Root pressure
(3) Bleeding (4) Oozing

32. Swelling of wooden planks and door during rainy season is due to:
(1) imbibition (2) endosmosis
(3) deplasmolysis (4) diffusion

33. Observe the following changes occuring in plant cell:

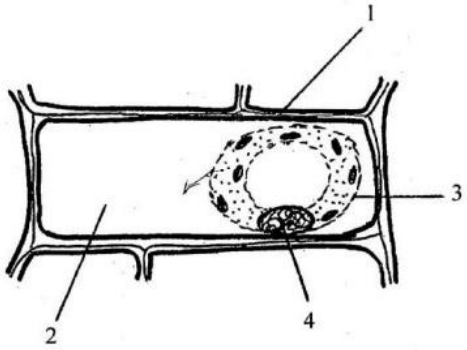


This changes occurs when plant is placed in 'A' solution. This leds to shrinking of plasma membrane called 'B'. Identify A & B.

	A	B
(1)	hypotonic	Endosmosis
(2)	hypertonic	Exosmosis
(3)	hypertonic	Plasmolysis
(4)	hypertonic	Deplasmolysis

34. Xylem conducts water in plants. The water is raised from the roots due to which of the following ?
(1) Root pressure
(2) Transpiration pull
(3) Cohesive and adhesive property of water
(4) All of the above.

35. Given below is the image of plasmolysed cell. Labelling no.2 represents:

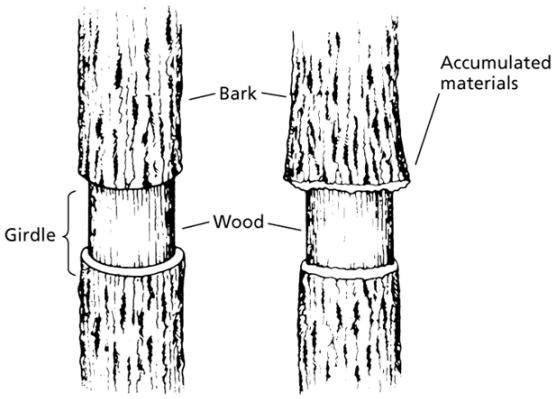


(1) Vacuole (2) Vacuum
(3) Hypotonic solution (4) Hypertonic solution

36. In plants, food is transported by 'X' in the form of 'Y' in 'Z' direction: Identify X,Y,Z.

	X	Y	Z
(1)	phloem	glucose	upward
(2)	phloem	glucose	downward
(3)	phloem	sucrose	upward & downward
(4)	phloem	starch	upward & downward

37. Observe the figure given below:



What conclusion can be made?
(1) Xylem conducts water in downward direction
(2) Xylem conducts water in upward direction
(3) Phloem lies towards the outer surface.
(4) Both 1 & 2

38. Largest heart is of:
(1) Giraffe (2) Elephant
(3) Crocodile (4) Lion

39. Open circulatory system is present in
a- Arthropoda b- Annelida
c- Chordata d- Mollusca
(1) c only (2) c & b
(3) a & b (4) a & d

40. Heart beat is initiated by
(1) AV node (2) SA Node
(3) Bundal of His (4) Left ventricle

41. The first heart sound is heard as:
(1) LUBB at the end of systole
(2) DUBB at the end of systole
(3) LUBB at the beginning of ventricular systole
(4) DHAK at the beginning of systole

42. Hepatic portal system connects:
(1) Digestive system to liver
(2) Kidney to liver
(3) Liver to heart
(4) Liver to kidney

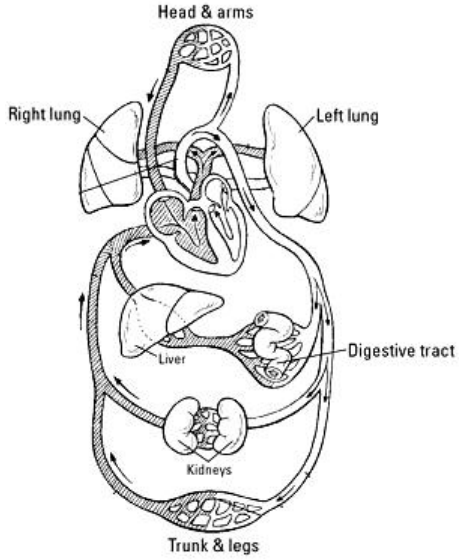
43. Radha's blood group is 'B'. Her family members blood group are as follows :
Mother- O Father- B
Uncle- AB Aunt- A
She can receive blood from:
(1) Only father (2) Both mother and father
(3) only mother (4) all except her aunt.

44. In rabbit, oxygenated blood flows from:
(1) left auricle to lungs
(2) left ventricles to lungs
(3) left ventricle to aorta
(4) right auricle to rest of the body

45. Which organ is known as the grave yard of RBCs?
(1) Pancreas (2) Kidneys
(3) Liver (4) Spleen

46. While playing, Raman got a small cut on his hand. But the bleeding didn't stop.
This indicates that he is suffering from _____ disorder, due to the deficiency of _____ in his blood.
(1) Immuno, WBC
(2) Immuno, Platelets
(3) Clotting, Platelets
(4) Clotting, RBC and WBC

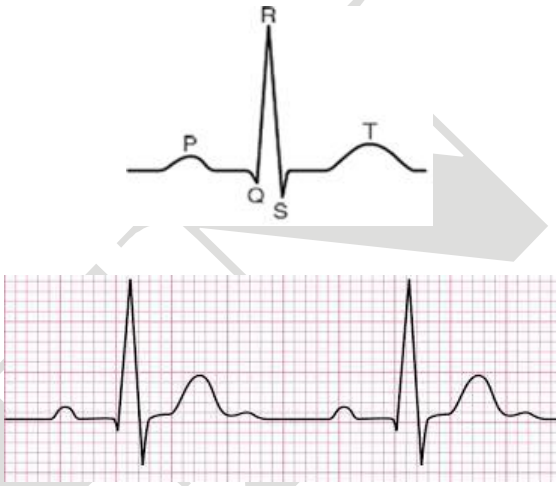
47. Observe the figure given below showing double circulatory system.



▨ - Pathway (A) ▭ - Pulmonary (B)
Identify the type of circulation in pathway A:
(1) Pulmonary (2) Systemic
(3) Coronary (4) Single circuit

48. In camel, RBCs are:
(1) Oval and nucleated
(2) Oval and non-nucleated
(3) Circular and nucleated
(4) Circular and non-nucleated

49. The image given below is generated by _____ machine, when a patient is suffering from_____ disorder.



(1) Cardiac machine, systolic disorder
(2) Electrocardiogram, cardio-vascular disorder.
(3) Sphygmomanometer, blood pressure disorder
(4) Stethoscope, pulmonary disorder.

50. Blood group is controlled by antigens which are present:
(1) In blood plasma
(2) On RBC membrane
(3) On WBC membrane
(4) In bone marrow

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	4	1	3	4	1	2	2	2	2	3
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	3	4	3	1	2	2	1	4	3	3
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	4	3	4	4	1	3	2	1	4	1
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	1	1	3	4	4	3	3	2	4	2
Q.	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
A.	3	1	2	3	4	3	1	2	2	2

3. EXCRETION, CO-ORDINATION IN PLANTS AND ANIMALS

1. Which of the following correctly describes excretion ?
(1) Removal of waste from the body via anus.
(2) Removal of nitrogenous waste.
(3) Removal of nitrogenous and other metabolic wastes
(4) None of the above.

2. Which of the following is/are the main excretory products of plants ?
(1) carbon dioxide (2) oxygen
(3) water vapour (4) all of these.

3. When you cut Arum Leaves, your hand starts itching. This is because:
(1) It has pointed hairs
(2) It contains calcium oxalate crystals.
(3) It releases resins.
(4) Both 1 & 2

4. Which of the following are useful waste materials of plants ?
(1) Gum (2) resins
(3) latex of rubber (4) all of these.

5. Plants get rid of their excretory products by:
(1) Shedding of leaves (2) Peeling of bark
(3) Falling of fruits (4) All of these

6. Excretory materials are formed in:
(1) Kidney (2) rectum
(3) liver (4) every body cell

7. Match the column correctly:

	Column I		Column II
a	Nephridia	p	Hydra
b	Malphigian tubules	q	Leech
c	Protonephridia	r	Shark
d	Kidney	s	Flatworm
		t	Cockroach

(1) a-t, b-q, c-s, d-r (2) a-q, b-s, c-t, d-p
(3) a-q, b-t, c-s, d-r (4) a-t, b-s, c-r, d-q

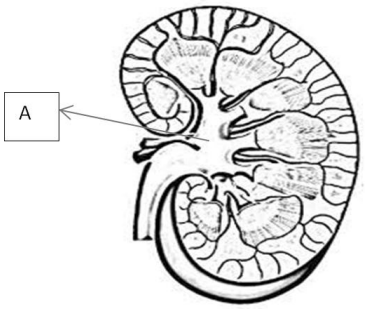
8. In mammals the urinary bladder opens into
(1) Uterus (2) Urethra
(3) Ureter (4) Rectum.

9. Which of the following will increase in blood if we remove liver from the body ?
(1) ammonia (2) protein
(3) urea (4) uric acid

10. Human Being is :
(1) ureotelic (2) uricotelic
(3) ammonotelic (4) both 2 & 3

11. Functional unit of human kidney is-
(1) Nephron (2) Neuron
(3) Nephridia (4) Henle's loop

12. In the given diagram, what does 'A' represent?



(1) Renal pyramid (2) Renal pelvis
(3) Renal medulla (4) Renal cortex.

13. Camels have long Henle's loop for:
(1) Producing dilute urine
(2) Producing concentrated urine
(3) Maximum absorption of water
(4) Both 2 & 3.

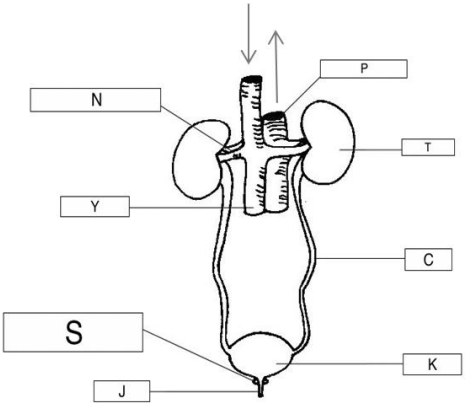
14. The first step in urine formation is:
(1) ultrafiltration
(2) tubular secretion
(3) selective reabsorption
(4) tubular reabsorption.

15. Haemodialysis is also called artificial:
(1) Liver (2) lung
(3) heart (4) kidney.

16. A person who is on a long hunger strike and is surviving only on water, will have:
(1) Less urea in his urine
(2) More sodium in his urine
(3) Less amino acids in his urine
(4) More glucose in his blood

17. In summer, the urine becomes:
(1) More frequent & dilute
(2) Less frequent & concentrated
(3) Less frequent & dilute
(4) More frequent & concentrated

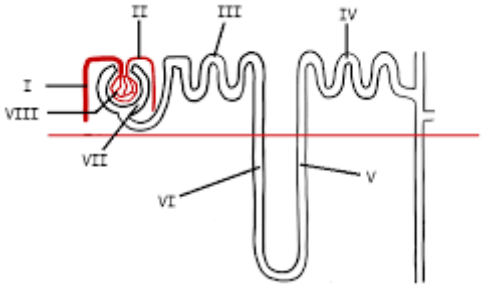
18. Refer the diagram given below & find the correct option:



(1) C= Urethra, K= Urinary bladder, J= Ureter
(2) C= Ureter, K= Urinary bladder, J= Urethra.
(3) T= Right kidney, P= Renal artery, Y= Renal vein
(4) T= Left kidney, P= Renal artery, Y= Renal vein

19. Which one of the following is not the function of the kidneys ?
(1) Regulation of blood volume
(2) Regulation of blood pH
(3) Synthesis of glucose
(4) Osmoregulation

20. Refer to the diagram given below of functional unit of Kidney- Nephron.
The third step of urine formation- Tubular secretion mainly occurs in which part?



(1) II & III (2) only IV
(3) V & VI (4) only III

21. Match the column:

	Column I		Column II
1	Growth of pollen tube towards ovule	a	Geotropic movement
2	Growth of shoot system	b	Chemotropic movement
3	Growth of root system	c	Phototropic movement
4	Growth towards water	d	Growth irrelevant movement
		e	Hydrotropic movement

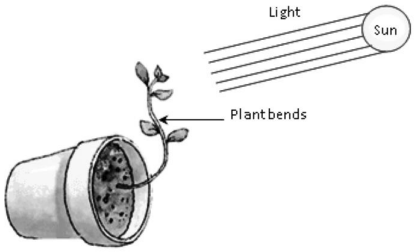
(1) 1-b, 2-c, 3- e, 4-a
(2) 1-b, 2-c, 3-a, 4-e
(3) 1-d, 2-c, 3-a, 4-e
(4) 1-d, 2-c, 3-a, 4-a

22. Which of the following is NOT the tropic movement ?
(1) Opening of flower during day time
(2) Coiling of tendril around the support
(3) Growth of stem against gravity.
(4) Growth of stem towards light.

23. Which of the following is NOT the plant growth promoting hormone ?
(1) Auxin (2) gibberellins
(3) Abscisic acid (4) cytokinins

24. Which of the following is/are Nastic movement ?
(1) Opening of flower during day time
(2) Drooping of Mimosa leaves on touch
(3) Catching of insect by Venus fly trap plant
(4) All of the above

Refer to the diagram given below for following two Questions:



25. The plant bends, under the effect of _____ hormone.
(1) Ethylene (2) Cytokinins
(3) Auxin (4) Gibberellins

26. This hormone causes the changes by:
(1) Moving towards light
(2) Moving away from the light
(3) Increasing cell division
(4) Both 2 & 3

27. Which of the following is NOT the effect of Gibberellins ?
(1) Stem elongation
(2) increase in leaf size
(3) increase in fruits size
(4) Leaf wilting.

28. Fruit ripening occurs due to the effect of _____ :
(1) Ethylene (2) Cytokinins
(3) Auxin (4) Gibberellins

29. Which of the following statement is FALSE for Venus fly trap plant ?
(1) It is an insectivorous plant
(2) It can not do photosynthesis
(3) It shows nastic movement
(4) It grows in nitrogen deficient soil.

30. Which of the following is TRUE for plants ?
(1) Plants show locomotion
(2) Plants have nervous system
(3) Plants show response to stimulii
(4) Plants don't show co-ordination movements.

31. The functional unit of our nervous system is:
(1) Nerve cell (2) Neuron
(3) Both 1 & 2 (4) Neuroglia

32. Which cell organelle is absent in neuron ?
(1) mitochondria (2) nucleus
(3) ribosome (4) centriole

33. Intercellular communication in multicellular animal occurs through -
(1) Nervous system only
(2) Endocrine system only
(3) Both nervous & endocrine system
(4) Respiratory system.

34. Cerebellum is concerned with:
(1) Co-ordination of muscular movement
(2) memory
(3) vision
(4) reflex action.

35. Drinking of alcohol mainly affects :
(1) cerebrum (2) cerebellum
(3) medulla oblongata (4) spinal cord

36. Match the column:

	Column I		Column II
A	Cerebrum	i	Controls pituitary
B	Cerebellum	ii	Controls vision & hearing
C	Hypothalamus	iii	Controls rate of heart beat
D	midbrain	iv	Seat of intelligence
		v	Maintains body posture

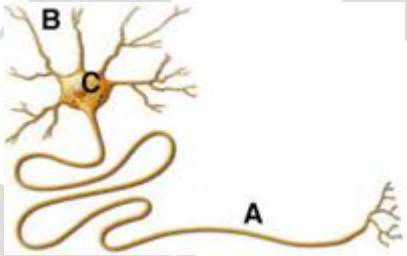
(1) A = v, B = iv, C = ii, D = i
(2) A = iv, B = v, C = ii, D = i
(3) A= v, B= iv, C= i, D= ii
(4) A= iv, B=v,C=i, D= ii

37. In dogs, the sense of smell is strong due to enlarged:
(1) Cerebrum (2) Cerebellum
(3) Nose (4) Olfactory lobe

38. Find out the correct sequence of simple reflex arc:
(1) Brain- spinal cord- nerves- effector
(2) Effector- CNS- sensory nerves – receptor
(3) Muscles- spinal cord- brain- receptor
(4) Receptor- sensory nerve- CNS- effector

39. In a Frog, if connection between brain & spinal cord is cut and a sharp needle is pricked to the leg then:
(1) No reaction is seen
(2) Move the leg that is pricked
(3) Move the leg & will feel pain
(4) Do not move the leg but will feel the pain

40. The nerve impulse will move in the path:



(1) A-B-C (2) B-C-A
(3) C-A-B (4) A-C-B

41. Which of the following is NOT true for Hormones ?
(1) It is an enzyme
(2) It is a chemical messenger
(3) It is secreted in low amount
(4) It is destroyed after use

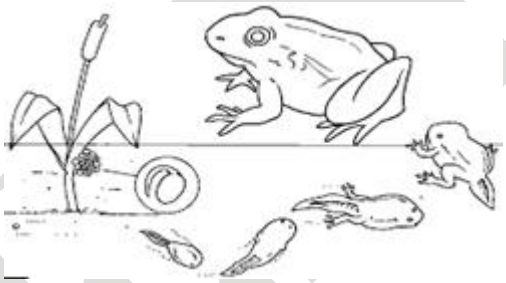
42. During winter, the urine production_____ due to _____.
(1) decreases, less ADH production.
(2) decreases, more ADH production
(3) increases, less ADH production.
(4) increases, more ADH production.

43. During emergency which hormone is secreted?
(1) Aldosterone (2) Thyroxine
(3) Adrenaline (4) Calcitonin

44. Which one secretes fight & flight hormone ?
(1) Pituitary gland (2) Pineal gland
(3) Adrenal gland (4) Thyroid gland

45. Hormone which is responsible for maintaining pregnancy is:
(1) Oestrogen (2) Progesterone
(3) Testosterone (4) Glucagon

Refer to the diagram given below for following two Questions:



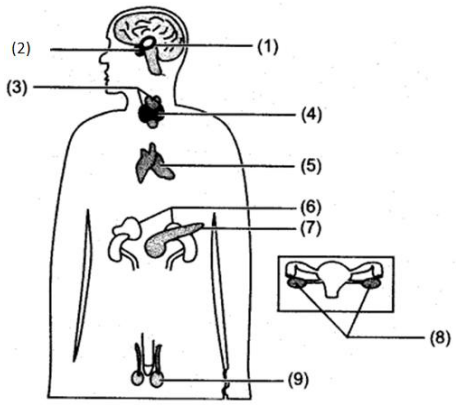
46. Which hormone is responsible for following change ?
(1) adrenaline (2) steroids
(3) thyroxine (4) parathormone

47. The hormone will not be produced due to :
(1) Deficiency of iodine in water
(2) Deficiency of iron in water
(3) Low temperature of water
(4) Presence of sugar in water

48. Which of the following pairs of organs includes only endocrine glands ?
(1) Thymus & testis
(2) Adrenal & ovary
(3) Parathyroid & adrenal
(4) Pancreas & parathyroid

49. Presence of glucose in urine of a patient may be associated with :
(1) Feeling more thirsty (2) Feeling less thirsty
(3) Deficiency of insulin (4) Both 1 & 3

50. Refer the diagram below :



Secretion of which gland regulates glucose level in the blood ?
(1) 2 (2) 6 (3) 7 (4) 5

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	3	4	2	4	4	4	3	2	1	1
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	1	2	4	1	4	1	2	2	3	2
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	2	1	3	4	3	4	4	1	2	3
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	3	4	3	1	2	4	4	4	2	2
Q.	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
A.	1	3	3	3	2	3	1	3	4	3

4. REPRODUCTION IN PLANTS AND ANIMALS

1. The process of release of ovum by female organism is called -
(1) Ovulation (2) Insemination
(3) Fertilization (4) Parturition

2. Sperms move by -
(1) Head (2) Acrosome
(3) Middle piece (4) Tail

3. Male hormone is -
(1) Corpus luteum (2) Testosterone
(3) Progesterone (4) Gonadotropin

4. How many sperms take part in fusion with female gamete?
(1) Only one
(2) Two
(3) Millions in number
(4) None of these

5. Binary fission in some organisms occur in definite orientation in relation to the cell structures. One such organism is -
(1) Plasmodium (2) Leishmania
(3) Amoeba (4) Virus

6. Which of the following is correct?
(1) Fertilization is a by-chance process
(2) Fertilization may occur Inside or outside the female body
(3) It is the fusion of two types of gamete (male or female)
(4) All the above

7. During in-vitro fertilization, the process of fertilization, occurs in -
(1) Uterus
(2) Fallopian tube
(3) Test tube in laboratory (outside the body)
(4) Water (outside the body)

8. Egg laying animals are known as -
(1) Viviparous (2) Oviparous
(3) Sterile (4) Hermaphrodite

9. Animals which give birth to young ones are called
(1) Amphibious (2) Oviparous
(3) Triploblastic (4) Viviparous

10. Multiple fission occurs in
(1) *Hydra* (2) *Plasmodium*
(3) *Planaria* (4) All of these

11. Methods of asexual reproduction are
(1) Fission (2) Budding
(3) Spore formation (4) All of these

12. In which of the following reproduction parental identity is lost?
(1) Budding (2) Binary fission
(3) Multiple fission (4) Both (2) and (3)

13. Binary fission occurs in -
(1) *Amoeba* (2) *Paramecium*
(3) *Planaria* (4) Both (1) and (2)

14. Which of the following can reproduce through regeneration?
(1) *Hydra* (2) *Planaria*
(3) Wall lizard (4) Both (1) and (2)

15. Which one of the following is concerned with asexual reproduction?
(1) Zygote (2) Spores
(3) Gametes (4) Gonads

16. Pollen grains are produced by -
(1) ovary (2) anther
(3) stigma (4) petal

17. Which one is applicable to insect pollinated flowers?
(1) Flowers are produced in less quantity
(2) Flowers are not prominent and without nectar
(3) Flowers are conspicuous and scented having nectar
(4) None of these

18. During pollination, pollen grains get carried to which part of the carpel?
(1) Ovary (2) Stigma
(3) Ovule (4) Style

19. Which part of the flower forms the fruit?
(1) Whole flower
(2) Only stamens and camel
(3) Only ovary
(4) Only carpel

20. After fertilization ovule grows into -
(1) seed (2) fruit
(3) placenta (4) None

21. The common method of reproduction in bacteria is
(1) Budding (2) Fragmentation
(3) Binary fission (4) All of these

22. The ability of living things to repair themselves or grow lost parts is called -
(1) spore formation (2) budding
(3) regeneration (4) none of these

23. Fertilization of ovum takes place in -
(1) Ovary (2) Fallopian tube
(3) Cervix (4) Uterus

24. In which one pair both the plants can be vegetatively propagated by leaf?

(1) Bryophyllum and Kalanchoe

(2) Chrysanthemum and Agave

(3) Agave and Kalanchoe

(4) Asparagus and Bryophyllum

25. What is the eyes of Potato?

(1) Axillary bud (2) Accessory bud

(3) Adventitious bud (4) Apical bud

26. Endosperm is formed during the double fertilization

(1) Two polar nuclei & one male gamete

(2) One polar nuclei & One male gamete

(3) Ovum and male gamete

(4) Two polar nuclei & two male gametes

27. What is pollen grain?

(1) Microspore mother cell

(2) Male gamete

(3) Male gametophyte

(4) Partially developed embryo

28. Double fertilization involves

(1) Fertilization of the egg by two male gametes

(2) Fertilization of two eggs in the same embryosac by two sperms brought by one pollen tube

(3) Fertilization of the egg and the central cell by two sperms brought by different pollen tubes

(4) Fertilization of the egg and the central cell by two sperms brought by the same pollen tube

29. If the pollen is transferred to the stigma of the same flower, it is termed -

(1) allogamy (2) geitonogamy

(3) autogamy (4) all of these

30. Endosperm nucleus is formed by the fusion of -

(1) 2 nuclei (2) 3 nuclei

(3) 4 nuclei (4) 5 nuclei

31. Pollination by wind is called -

(1) Anemophily (2) Hydrophily

(3) Zoophily (4) Entomophily

32. The embryo gets the nutrition from the mother's blood with the help of a special tissue known as -

(1) Uterus (2) Endometrium

(3) Placenta (4) Zygote

33. Which of the following is not a part of female reproductive system in human beings?

(1) Ovary (2) Vas deferens

(3) Uterus (4) Fallopian tube

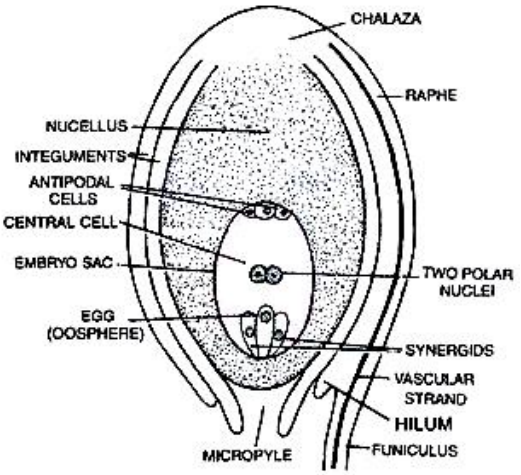
Read the paragraph and answer the following questions:

Ovule is the inner part of the ovary. Each ovule has one or two protective coverings, the integuments. The integuments leave a small opening called the micropyle at one end. Enclosed by the integuments is the nucellus, and further inside the nucellus is the embryo sac. The embryo sac contains seven (3 + 3 + 1) cells:

1) 3 cells at micropylar end- one egg cell and two synergids.

2) 3 cells at the opposite end, called antipodal cells and,

3) One large central cell. The central cell is different containing two nuclei called polar nuclei.



34. After fertilization, the ovule develops into _____.

(1) Embryo (2) Seed

(3) Fruit (4) Endosperm

35. The function of the micropyle is -

(1) It makes water available to the embryo for germination.

(2) It provides for diffusion of respiratory gases for the growing embryo.

(3) It provides nourishment to the growing embryo.

(4) Both (1) & (2)

36. The primary endosperm nucleus is formed by the fusion of _____

(1) Egg cell and male nucleus.

(2) Egg cell and tube nucleus.

(3) 2 polar nuclei and male nucleus.

(4) Egg cell and polar nuclei.

37. The outer integument forms the ---

(1) Tegmen (2) Testa

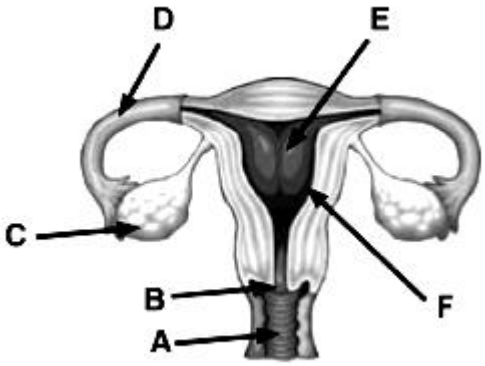
(3) Pericarp (4) Mesocarp

38. The fertilized egg cell forms _____.

(1) Seed (2) Fruit

(3) Flower (4) Embryo

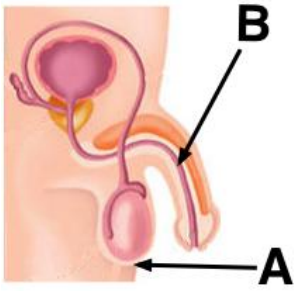
39. Match the column -



Column - I	Column - II
A	(i) Fallopian tube
B	(ii) Vagina
C	(iii) Uterus
D	(iv) Cervix
E	(v) Ovary
F	(vi) Lining of womb wall

(1) A - (ii) ; B - (iv) ; C - (v) ; D - (i) ; E - (iii) ; F - (vi)
(2) A - (iii) ; B - (v) ; C - (iv) ; D - (ii) ; E - (i) ; F - (vi)
(3) A - (iv) ; B - (iii) ; C - (vi) ; D - (ii) ; E - (v) ; F - (i)
(4) A - (i) ; B - (ii) ; C - (v) ; D - (iv) ; E - (vi) ; F - (iii)

40. Name the parts labelled A and B in the diagram



(1) A = prostrate gland, B = urethra
(2) A = sperm duct, B = penis
(3) A = scrotum, B = urethra
(4) A = scrotum, B = prostrate gland

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	1	4	2	1	3	4	3	2	4	2
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	4	4	4	4	2	2	3	2	3	1
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	3	3	2	1	1	1	3	4	3	2
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	1	3	2	2	4	3	2	4	1	3

5. ENVIRONMENTAL MANAGEMENT & DISASTER MANAGEMENT

1. Measure of moisture in air is -
(1) Temperature (2) Humidity
(3) Rainfall (4) None

2. Time taken for average weather pattern is -
(1) 20 years (2) 50 years
(3) 30 years (4) 25 years

3. In India which region is wet -
(1) North East (2) North West
(3) South East (4) South West

4. The humans perspire when body temperature is warm and -
(1) precipitation is low (2) precipitation is high
(3) humidity is high (4) humidity is low

5. The tropical monsoon and equatorial climate are the kinds of -
(1) polar climate (2) temperate climate
(3) tropical climate (4) frontal climate

6. The element which is used to measure how cold or hot the weather is -
(1) wind (2) precipitation
(3) humidity (4) temperature

7. Study of which of the following is not included in meteorology?
(1) Storms (2) Clouds
(3) Thunder (4) Topography

8. The places where the temperature of air is above freezing point of the water, the precipitation will be in the form of -
(1) hailstorms (2) thunders
(3) rain (4) lightning

9. Which of the following methods of waste management produce energy?
(1) Biomedical waste management
(2) Safe landfill sites
(3) Industrial Solid waste management
(4) Pyrolysis

10. Which process improves the efficiency of solid waste management?
(1) Disposal (2) Collection
(3) Compositing (4) Processing

11. The term Municipal Solid Waste (MSW) is generally used to describe:
(1) Wastes from industrial processes, construction and demolition debris.
(2) Wastes from Private homes, commercial establishments and institutions.
(3) Mining wastes
(4) Agricultural wastes

12. Problem of solid waste disposal can be reduced through…….
(1) Recycling (2) Lesser pollution
(3) More timber (4) Population control

13. The most serious environmental effect posed by hazardous wastes is …….
(1) Noise pollution
(2) Contamination of groundwater
(3) Increased use of land for landfills.
(4) None of these

14. The WHO has classified the bio-medical waste into _____ categories.
(1) 5 (2) 4
(3) 3 (4) 2

15. Which gas produced in open dumps from decomposition of biodegradable waste?
(1) Ethane (2) Methane
(3) Propene (4) Ethene

16. Which is not true about incineration of solid waste?
(1) there are drastic reductions in the volume and weight of wastes
(2) the ash can contain heavy metals and other toxic substances
(3) the incinerators are relatively cheap to build
(4) the incinerators can be built to generate electricity

17. What are the steps to take if you are exposed to blood or other infectious materials?
(1) Needle sticks or sharps injuries should be immediately washed with soap and water
(2) Irrigate eyes with an eye wash for 10 to 15 mintues
(3) Report the incident to your supervisor and seek immediate medical treatment
(4) All of the above

18. Reena dug two pits A and B in her garden. In pit A she put a polythene bag packed with some agricultural waste. In pit B She dumped the same kind of waste but without packing it in a polythene bag. She then covered both the pits with the soil. What she observe after two months ?
(1) Waste in pit A degraded faster than in Pit B.
(2) Waste in pit B degraded faster than in Pit A
(3) Waste in both the pits degraded almost equally
(4) Waste in both the pits did not degrade at all.

19. Chipko movement is related to
(1) Forest conservation
(2) Soil conservation
(3) Water conservation
(4) Wetland conservation

20. The droughts, unequal distribution of food, in creased population and flooding are the causes of
(1) typhoid (2) dengue fever
(3) malaria (4) famine

21. The situation which occurs due to occurrence of more rainfall than normal level or poor water distribution is
(1) drought (2) monsoon winds
(3) flood (4) tropical rain

22. Of the following, which is not a natural disaster?
(1) Deforestation (2) Nuclear explosion
(3) Forest fire (4) Lightning

23. In Gujarat Swami Narayan temple was affected by ……..
(1) Earthquake (2) Floods
(3) Drought (4) Land slide

24. The trembling of the earth's crust is known as ……
(1) Volcano (2) Earthquake
(3) Flood (4) Cyclone

25. Cyclone is a ……..
(1) Hazard (2) Boon
(3) Growth phenomena (4) Problem

26. In India Tsunami warning centre is located at ……
(1) Hyderabad (2) Ahmedabad
(3) Allahabad (4) Secunderabad

27. A _____ is an extreme amount of precipitation in a short period of time, sometimes accompanied by hail and thunder, that is capable of creating flood conditions.
(1) Cloudburst (2) volcano
(3) Acid rain (4) Cyclone

28. Tsunami can only occur during
(1) Evening
(2) Any time in day and night
(3) Afternoon
(4) Night

29. United Nations Disaster Management team is responsible for solving problem resulting from disaster in
(1) Asia (2) Africa
(3) Australia (4) In all continents

30. The Disaster management Act was made in
(1) 2005 (2) 2006
(3) 2007 (4) 2009

31. The natural resources available in limited quantity at global level is
(1) Renewable (2) Non renewable
(3) Exhaustible (4) Inexhaustible

32. There is decrease in _____ because of deforestation
(1) Soil erosion (2) Rainfall
(3) Global Warming (4) Drought

33. Which of the following soil is best for plant growth?
(1) Sandy soil (2) Loamy soil
(3) Clayey Soil (4) Gravel

34. Ex situ conservation is carried out in
(1) Santcuary
(2) Biosphere reserve
(3) Zoo
(4) National park

35. Most effective in controlling floods is
(1) Overgrazing
(2) Digging canal
(3) Deforestation
(4) Reforestation

36. The main reserve for fresh water on earth is -
(1) Polar ice caps and glaciers
(2) Ground water
(3) Rivers
(4) Lakes

37. Population of species decreasing over a period is - called as_____
(1) Extinct (2) Endangered
(3) Eliminated (4) Rare

38. Disaster can be classified as
(1) Geophysical (2) Biological
(3) Man made (4) All of these

39. Maximum lives in the case of a disaster can be saved by quick action during which phase?
(1) Pre-disaster phase
(2) Phase of emergency
(3) Transitional phase
(4) Reconstruction phase

40. Objectives of disaster management are
(1) Supply of essential commodites
(2) Restoration of human life
(3) Protective measure to prevent such disaster
(4) All of these

41. Chairman of district disaster management authority is
(1) Collector (2) Chief minister
(3) Tahsildar (4) Sarpanch

42. The 'RICE' remedy for injuries like sprains, contusions include
(1) Rest
(2) Ice
(3) Compression and elevate
(4) All of these

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	2	3	1	3	3	4	4	3	4	4
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	2	1	2	2	2	3	4	2	1	4
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	3	1	1	2	1	1	1	2	4	1
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	3	2	2	3	4	1	2	4	2	4
Q.	**41**	**42**								
A.	1	4								

6. ENERGY FLOW IN AN ECOSYSTEM

1. Gaseous nitrogen can be used by plants only after the process of
(1) Nitrogen cycling
(2) Nitrogen fixation
(3) Ammonification
(4) Nitrifications

2. Conversion of ammonia to nitrite and then nitrate is called
(1) Nitrogen fixation (2) Denitrification
(3) Nitrification (4) Ammonification

3. The loss of water from plants and tree leaves is called
(1) Precipitation (2) Respiration
(3) Evaporation (4) Transpiration

4. Which of the following is a non-renewable resource?
(1) Coal (2) Forest
(3) Water (4) Wildlife

5. Deforestation generally decreases
(1) Rainfall (2) Soil erosion
(3) Draught (4) Global warming

6. Biodiversity means
(1) The living natural resources
(2) Land and forest
(3) Oceans and sea
(4) Atmosphere

7. Food chain always starts with
(1) Respiration (2) Transpiration
(3) Nitrogen fixation (4) Photosynthesis

8. The ecological pyramid always starts with the following at the base
(1) Decomposer (2) Producer
(3) Consumer (4) None of these

9. Hydrological cycle provides us
(1) Fresh water (2) Nitrogen
(3) Carbon dioxide (4) None of these

10. The layer of atmosphere containing much of ozone gas is -
(1) Thermosphere (2) Stratosphere
(3) Troposphere (4) Mesosphere

11. The coldest layer of temperature having minimum temperature range of -950°C is -
(1) Thermosphere (2) Mesosphere
(3) Stratosphere (4) Troposphere

12. Thermosphere has two layers of
(1) Ionosphere and Exosphere
(2) Stratosphere and Troposphere
(3) Mesosphere and Troposphere
(4) Mesosphere and Stratosphere

13. The layer which provides ideal site for flying of jet planes is -
(1) Thermosphere (2) Troposphere
(3) Mesosphere (4) Stratosphere

14. The term "Environment" means
(1) Sum total of all conditions that the life and development of all organisms on earth
(2) A beautiful earth
(3) Earth and water
(4) A combination of plants and animals

15. Elements of environment are
(1) Nitrogen, Carbon dioxide, Oxygen
(2) Nitrogen, Oxygen, Ozone
(3) Carbon dioxide, Oxygen, Ozone
(4) Lithosphere, Atmosphere, Hydrosphere and Biosphere

16. The term Environment is derived from an old French word "enviro" means
(1) Outside (2) Surroundings
(3) Inside (4) Biotic community

17. Hydrosphere includes
(1) Animals (2) Soil
(3) Plants (4) Water bodies

18. All of the following statements about ecology are correct except:
(1) Ecology is the study of the interactions between biotic and abiotic aspects of the environment
(2) Ecology is a discipline that is independent from natural selection and evolutionary history
(3) Ecologists may study populations and communities of organisms.
(4) Ecology spans increasingly comprehensive levels of organization, from individuals to ecosystems

19. Atomospheric ozone layer which protect us from UV-B & C is getting depleted most by addition of-
(1) Chloro flurocarbon
(2) Carbon monooxide
(3) Carbon dioxide
(4) Sulphur dioxide

20. 5th June is observed as
(1) World forest day
(2) World environment day
(3) World wildlife day
(4) World population day

21. 21st March is observed as
(1) World forest day
(2) World environment day
(3) World wildlife day
(4) World population day

22. Nitrogen gets oxidized into
(1) Ammonia and urea (2) Nitrates and ammonia
(3) Urea and nitrite (4) Nitrates and nitrites

23. Earthworms and bacteria are called
(1) Producers (2) Consumers
(3) Decomposers (4) None of these

24. What is Dendrology?
(1) Study of Plants (2) Study of Butterflies
(3) Study of Trees (4) None of these

25. An example of one way ecological cycle is
(1) carbon dioxide cycle (2) water cycle
(3) energy cycle (4) oxygen cycle

26. Which is an example for sedimentary biogeochemical cycle?
(1) Oxygen cycle (2) Nitrogen cycle
(3) Water cycle (4) Phosphorus cycle

27. What is desertification?
(1) Conversion of forests into desert
(2) Conversion of croplands into desert
(3) Conversion of grassland into desert
(4) all of the above

28. What is Canopy?
(1) Uppermost level of the forest.
(2) Ground level of the forest
(3) Soil in forest
(4) Climbers on trees

29. What is Plankton?
(1) Microscopic floating organisms – Plants and animals
(2) bottom dwelling aquatic organisms
(3) large plants in water
(4) none

30. What is hibernation and aestivation ?
(1) Thermal adaptation shown by animals
(2) wind adaptation shown by animals
(3) adaptation of animals to escape from predators
(4) none

31. Plants which grow in light are called -
(1) Sciophytes (2) Heliophytes
(3) Oxylophytes (4) Epiphytes

32. Ecology is -
(1) The science that studies the evolution of life.
(2) Integrates both social and natural sciences to help us understand how the earth works.
(3) The study of the relationships between organisms and their environment.
(4) The study of the environment in the absence of humans.

33. Plants which grow in shade are called -
(1) Sciophytes (2) Heliophytes
(3) Oxylophytes (4) Epiphytes

34. Which one is nature's cleaner?
(1) Consumers
(2) Producers
(3) Decomposers and Scavengers
(4) Symbionts

35. Enrichment of water body by nutrients like phosphorus and nitrogen is called _____
(1) Succession (2) Eutrophication
(3) Stratification (4) Climax Vegetation

36. The legally binding international agreement to reduce Greenhouse gases by 5% in 2012 is _____
(1) Vienna convention (2) Montreal Protocol
(3) Kyoto Protocol (4) None of these

37. The cause of Bhopal disaster is
(1) Methyl Alcohol (2) Methyl Carbonate
(3) Methyl Iso Cyanate (4) Methyl Sulphate

38. Photochemical smog is called
(1) Tokyo smog (2) London smog
(3) Los Angeles smog (4) None

39. The combustion of waste in the absence of Oxygen is called
(1) Haemolysis (2) Pyrolysis
(3) Hydrolysis (4) None

40. BOD stands for
(1) Biological Oxygen Decrease
(2) Biotic Oxygen Demand
(3)Biological Oxygen Demand
(4) None of the above

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	2	3	4	1	1	1	4	2	1	2
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	2	1	4	1	4	2	4	2	1	2
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	1	4	3	3	3	4	4	1	1	1
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	2	3	1	3	2	3	3	2	2	3

7. USEFUL AND HARMFUL MICROBES

1. Rhizobium bacteria
(1) Help in digestion
(2) Help in nitrogen fixation
(3) Cause diseases
(4) All of the above

2. Which of the following is damaged by the growth of fungus?
(1) Wood (2) Clothes
(3) Leather (4) All of the above

3. During baking process of bread ethanol is
(1) absorbed (2) evaporated
(3) condensed (4) reacted

4. For viral infection drugs used should be
(1) vaccines (2) antibiotics
(3) antifungal (4) antiviral

5. The lichens represent symbiotic relationship between
(1) Algae and Fungi
(2) Algae and bacteria
(3) virus and fungi
(4) virus and bacteria

6. Yeast contains maximum amount of
(1) Vitamin C (2) Riboflavin
(3) carbohydrate (4) protein

7. *Saccharomyces cerevisiae* is
(1) Bakers yeast (2) Beer yeast
(3) Wine yeast (4) Brewers yeast

8. E.coli in human intestine synthesises
(1) Vitamin B and D
(2) Vitamin B and C
(3) Vitamin A and K
(4) Vitamin B and K

9. Agar is commercially obtained from
(1) Algae (2) bacteria
(3) protozoa (4) Virus

10. In blue green algae,the structure specialised in nitrogen fixation is
(1) Thylakoid (2) Endospore
(3) Heterocyst (4) Haemogonia

11. Which organisms are used for bio remediation?
(1) Pseudomonas (2) Nitrobacter
(3) Nitrosomonas (4) Blue green Algae

12. _____ directly absorbs nitrogen from atmosphere and convert it into ammonia.
(1) Nostoc (2) Rhizobium
(3) Bacteria (4) Fungi

13. _____ is an excellent stabiliser used in toothpaste, ice creams lotions, etc
(1) Algae (2) Kelp
(3) Agar (4) Moss

14. Viruses are
(1) completely saprophytes
(2) complete parasite
(3) partial saprophytes
(4) partial parasites

15. A disease in human beings caused by a virus.
(1) A Typhoid (2) Influenza
(3) Dysentry (4) Cholera

16. The primary host for malaria is
(1) Male Culex (2) Female Culex
(3) Male Anopheles (4) Female Anopheles

17. AIDS virus has
(1) Single stranded DNA
(2) Double stranded DNA
(3) Double stranded RNA
(4) Single stranded RNA

18. Cure for a viral disease (AIDS) is
(1) not found (2) found
(3) discovered (4) effective

19. A theory which explains that most diseases are caused by microorganisms was given by
(1) Louis Pasteur (2) Marie Claire
(3) Thomas (4) Newton

20. BCG vaccination can prevent
(1) cholera (2) tuberculosis
(3) hepatitis (4) HIV

21. Diarrhea, vomiting and severe abdominal cramps shows their sign in
(1) food poisoning (2) constipation
(3) heart diseases (4) muscle cramps

22. Bacteria which is present in raw or undercooked meat, eggs, sea food and un-pasteurized milk is
(1) E.coli (2) Salmonella
(3) Staphylococcus (4) Cyano bacteria

23. Addiction of smoking leads to
(1) Lung cancer (2) Bronchitis
(3) Emphysema (4) All of the above

24. DOTS is the treatment adapted for
(1) Tetanus
(2) Tuberculosis
(3) Sexually transmitted diseases
(4) Dementia

25. Severe Acute Respiratory Syndrome SARS is
(1) caused by variant of Pneumococcus pneumonia
(2) caused by variant of common cold virus (corona virus)
(3) an acute form of asthma
(4) affects non vegetarians much faster than vegetarians

26. The disease tetanus is also known as
(1) Lock jaw (2) Shingles
(3) Whooping cough (4) Gangrene

27. Select the incorrect pair :
(1) Tetanus : *Clostridium tetani*
(2) Tuberculosis : *Mycobacterium tuberculosis*
(3) Whooping Cough : *Haemophilus pertussis*
(4) Typhoid : *Diplococcus Pneumoniae*

28. A : It is caused due to deficiency of fats proteins and carbohydrates
B : It is caused due to protein defieiency
Which of the following correctly matches the statements given above.
(1) A is Marasmus. B is Kwashiorkor
(2) A is Kwashiorkor, B is Marasmus
(3) And B are both Kwashiorkor
(4) None of them is correct

29. On the basis of nucleus viruses should be included in
(1) Prokaryotes (2) Eukaryotes
(3) Both (1) and (2) (4) None of these

30. Which of the following is not caused by virus'
(1) Tuberculosis (2) Chicken pox
(3) Polio (4) Measles

31. Malaria chill followed by fever is due to
(1) Multiplication of plasmodium in liver cells
(2) There is no such symptom in malaria
(3) Bursting of RBC whiteness known as Erythrocytic schizogony.
(4) Both (1) and (3)

32. Fermentation is carried out by yeast cells in the absence of
(1) Nitrogen (2) Carbondioxide
(3) Hydrogen (4) Oxygen

33. Which of the following is true about protozoans?
(1) Some of the protozoans move with pseudopodium
(2) Some of the protozoans move with cilia
(3) Some of protozoans do not move
(4) All of the above

34. Which of the following disease is not spread through contact?
(1) Ringworm (2) Herpes
(3) Conjunctivitis (4) Malaria

35. If a slice of moist bread is covered with a glass jar it develops
(1) Swells
(2) Fungal mycellium
(3) Does not develop fungus
(4) Does not show any change

36. Read the following statements about four kinds of micro organisms. P, Q, R, S
(a) P coverts milk into curd
(b) Q is used for making antibiotics
(c) R contains RNA as genetic material and causes reduction in the immunity of its host
(d) S is used to manufacture wine.
Identify P, Q, R and S and select the correct option
(1) P is yeast and R is HIV
(2) Q is lactobacillus and R is yeast
(3) P is lactobacillus and Q is penicillium
(4) Q is HIV and S is yeast

37. Which of the following is not a harmful use of micro organisms?
(1) Food Spoilage (2) Citrus canker
(3) Curd preparation (4) Causing disease

38. Food like meat, fish, vegetable, etc can be stored for a longer period in a freezer because
(1) Micro organisms grow at a faster rate in cold environment
(2) Micro organisms present in food die at low temperature
(3) Micro organisms present in food cannot grow and reproduce at low temperature
(4) All of these

39. Which of the following disease is caused by *Trypanosoma*?
(1) Syphilis (2) Kala Azar
(3) Dengue (4) Sleeping sickness

40. Rabies is caused by
(1) RNA virus (2) DNA virus
(3) Bacteriophage (4) bacteria

41. Citric acid is obtained from
(1) *Aspergillus niger*
(2) *Coprinum (mushroom)*
(3) *Nostoc*
(4) *Saccharomyces*

42. Which of the following are the useful activities of fungi ?
(1) It is used in food industry
(2) It is used in medicine industry
(3) It helps in maintenance of environmental balance of recycling of materials
(4) All of these

43. *Saccharomyces cerevisiae* is
(1) Baker's yeast (2) Brewer's yeast
(3) Both (1) and (2) (4) Wine yeast

44. *Entamoeba histolytica* is found in
(1) Rectum (2) Oral cavity
(3) Stomach (4) Intestine

45. Microorganisms are our friends and foes. Some of them are useful to us while some are harmful. From the given list sort out useful and harmful actions of microorganisms.

(Production of antibiotics, food spoiling, curd preparation, vaccine production, citrus canker.)

(1) **Useful:** Curd preparation, citrus canker, production of antibiotics
Harmful: Food spoiling, vaccine production.

(2) **Useful:** Production of antibiotics, curd preparation, vaccine production.
Harmful: Food spoiling, Citrus canker.

(3) **Useful:** Citrus canker, vaccine production, curd preparation.
Harmful: Food spoiling, production of antibiotics

(4) **Useful:** Vaccine production, curd preparation.
Harmful: Food spoiling, citrus canker, production of antibiotics.

46. *Escherichia coli* in human intestine synthesizes_.

(1) Vitamin B and D
(2) Vitamin B and C
(3) Vitamin A and K
(4) Vitamin B and K

47. Vitamin A is derived from which fungus?

(1) *Rhodotorula gracilis*
(2) Yeast
(3) *Saccharomyces cerevisae*
(4) None of these

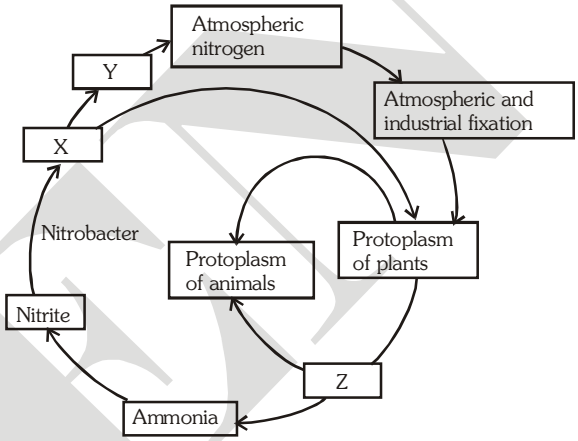
48. Bacteria used to clean oil spills are

(1) Pseudomonas (2) Clostridium
(3) Streptococcus (4) Staphylococcus

49. Chloromycetin antibiotic is obtained from

(1) *Streptomyces venezuelae*
(2) *Streptomyces ramosus*
(3) *Bacillus licheniformis*
(4) None of these

50. The given cycle represents circulation of nitrogen in the environment. Identify X, Y and Z in the cycle and select the correct option.



(1) X - Denitrification, Y - Ammonification, Z - Nitrogen fixation
(2) X - Nitrate, Y - Denitrification, Z - Ammonification
(3) X - Nitrate, Y - Nitrogen fixation, Z - Ammonification
(4) X - Nitrification, Y - Ammonification, Z - Denitrification

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	2	4	2	4	1	2	1	4	1	3
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	1	1	1	2	2	4	4	1	1	2
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	1	2	4	2	2	1	4	1	4	1
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	3	4	4	4	2	3	3	3	4	1
Q.	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
A.	1	4	3	4	2	4	1	1	1	2

8. CLASSIFICATION OF PLANTS

1. In which of the following kingdoms, bacteria and blue-green algae are included.
(1) Monera (2) Plantae
(3) Animalia (4) Protista

2. Which of the following is included in five kingdom classification?
(1) Monera, Protista, Animalia, Plantae, Algae
(2) Monera, Protista, Fungi, Plantae, Animalia
(3) Virus, Prokaryota, Fungi, Plantae,Animalia
(4) Algae, Fungi, Bryophyta, Pteridophyta, Gymnosperm

3. Which one of the following is also called halophiles?
(1) Eubacteria (2) Actinomyces
(3) Cyanobacteria (4) Archaebacteria

4. Match the following.

A		B	
(p)	Archaea	(i)	Cell wall is made up of cellulose
(q)	Bacteria	(ii)	Cell wall does not contain peptidoglycan
(r)	Eukarya	(iii)	Cell wall is made up of peptidoglycan

(1) p - (iii), q - (i), r - (ii)
(2) p - (i), q - (ii), r - (iii)
(3) p - (ii), q - (i), r - (iii)
(4) p - (ii), q - (iii), r - (i)

5. Virus have ....
(1) DNA core, Lipid coat
(2) DNA or RNA core, Protein coat
(3) DNA or RNA core, plasma membrane
(4) DNA containing nucleus, lipid envelope

6. Match the following :

A	B
(p) Chlamydomonas	(i) Colonial Forms
(q) Volvox	(ii) Unicellular
(r) Ulothrix	(iii) Filamentous forms
(s) Nostoc	(iv) Cyanobacteria

(1) p - (i), q - (ii), r - (iii), s-(iv)
(2) p-(ii), q - (iii), r - (i), s-(iv)
(3) p - (iii), q - (i), r - (iv), s-(ii)
(4) p - (ii), q - (i), r - (iii), s-(iv)

7. The study of algae is called _____ .
(1) Mycology (2) Algology
(3) Taxonomy (4) Lichenology

8. Unicellular eukaryotic microorganisms comprise _____ .
(1) Fungi (2) Monera
(3) Plants (4) Protista

9. Protista include :
(1) Paramecium, Euglena, Dinoflagellates
(2) Hydra, Amoeba, Paramoecium
(3) Yeast, Euglena, Dinoflagellates
(4) Mushroom, Paramoecium, Euglena.

10. The study of fungi is _____ .
(1) Cytology (2) Mycology
(4) Virology (4) Algology

11. Match the following:

A	B
(p) Yeast	(i) Bread mould
(q) Mucor	(ii) Mushroom
(r) Agaricus	(iii) Unicelluar

(1) p - (ii), q - (i), r - (iii)
(2) p - (i), q - (ii), r - (iii)
(3) p - (iii), q - (i), r - (ii)
(4) p - (iii), q - (ii), r - (i)

12. Which sentence is true for Bryophytes?
(1) They are autotropic
(2) Vascular tissues are absent
(3) Fertilization takes place in the presence of water
(4) All of the these

13. Which of the following monocotyledons possess false stem?
(1) Banana (2) Onion
(3) Bamboo (4) Wheat

14. The first land plant on earth was _____ .
(1) Bryophytes (2) Pteridophytes
(3) Gymnosperms (4) Angiosperms

15. The biggest and dominant group is _____ .
(1) Bryophytes (2) Pteridophytes
(3) Gymnosperms (4) Angiosperms

16. If a seed is defined as an ovule modified as a result of fertilization, one may expect to find seeds in
(1) All vascular plants (2) All phanerogams
(3) Angiosperm only (4) Gymnosperms only

17. Which classification system had been given by Whittaker?
(1) Three domain classification
(2) Binomial classification
(3) Five kingdom classification
(4) Artificial classification

18. Assertion = Lichens show symbiotic relationship between algae and fungi.
Reason = Algae absorb water and mineral nutrients from environment and provides to fungi. While fungi synthesize food by the process of photo synthesis and provide to algae.

(1) Both Assertion and Reason true and Reason is the correct explanation of Assertion
(2) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
(3) Assertion is true statement but Reason is false
(4) Assertion is false and Reason is true.

19. Which name is written correctly?
(1) Apis indica (2) Hibiscus esculentus
(3) *Mangifera indica* (4) Ficus bengalensis

20. Botanical name of potato is
(1) *Ipomea batatas*
(2) *Solanum tuberosum*
(3) *Mangifera indica*
(4) *Azadirachta indica*

21. Primitive nucleus, DNA without histone proteins, absence of membrane bound cell organelles are the characters of Kingdom
(1) Protista (2) Monera
(3) Fungi (4) Plantae

22. Organisms of kingdom Monera shows
(1) Chloroplasts (2) Mitochondria
(3) Rigid cell wall (4) All of these

23. Vascular tissues are absent in
(1) Algae and bryophyta
(2) Bryophyta and pteridophyta
(3) Algae and gymnosperm
(4) Bryophyta and gymnosperm

24. Which is not a correct match?
(1) Fungi – Penicillium (2) Monera – bacteria
(3) Protista – yeast (4) Plantae – moss

25. Vascular cryptogams are called so, because
(1) All plants reproduce by spore formation
(2) Reproductive organs cannot be seen
(3) They have separate tissues for conduction
(4) Cycas, Thuja and Pinus belong to this group

26. Lichens are described as an indicator of
(1) air pollution (2) soil pollution
(3) water pollution (4) agricultural productivity

27. Fungi can be distinguished from algae because of
(1) chitinous cell wall and presence of chloroplast
(2) cellulosic cell wall and presence of chloroplast
(3) chitinous cell wall and absence of chloroplast
(4) cellulosic cell wall and absence of chloroplast

28. Five kingdom system of classification suggested by R.H. Whittaker is not based on
(1) Presence or absence of a well defined nucleus
(2) Mode of reproduction
(3) Mode of nutrition
(4) Complexity of body organisation

29. Which one of the following natural polymers is found both in insects and fungi?
(1) Pectin (2) Chitin
(3) Cellulose (4) Suberin

30. Match the following and select the correct combination from the options given below.

Column I (Kingdom)	Column II (Class)
a. Plantae	1. Bacteria
b. Fungi	2. Paramecium
c. Protista	3. Yeast
d. Monera	4. Algae

(1) a–4, b–3, c–2, d–1
(2) a–1, b–2, c–3, d–4
(3) a–3, b–4, c–2, d–1
(4) a–4, b–2, c–3, d–1

31. A student observed a water drop under microscope. He found a photosynthetic organism. Its cell walls form two thin overlapping shells, which fit together as in a soap box. Which of the following organism it is?
(1) Euglenoid (2) Dinoflagellate
(3) Sporozoans (4) Diatom

32. Lichens are well known combination of an algae and a fungus, where fungus has
(1) a saprophytic relationship with the algae
(2) an epiphytic relationship with the algae
(3) a parasitic relationship with the algae
(4) a symbiotic relationship with the algae

33. In the hierarchical classification, division is interpolated between
(1) Series and Order
(2) Genus and Species
(3) Family and Genus
(4) Kingdom and Class

34. The generic name of Neem is
(1) *Azadirachta Indica*
(2) *Indica Azadirachta*
(3) *Azadirachta indica*
(4) *Azadirachta*

35. Select the incorrect statements.
a. Division is the highest taxonomic category.
b. Polynomials are easy to understand and remember.
c. Binomial system of nomenclature was introduced by Linnaeus.
d. Two Kingdom system of classification was introduced by Haeckel.
(1) a and b (2) a, b and c
(3) a, b and d (4) b, c and d

36. The protein coat of virus is called
(1) Capsomere (2) Capsid
(3) Cosmid (4) Cyanophage

37. Find out the incorrect pair.

Kingdom	Class
(1) Protista	Amoeba
(2) Monera	Cyanobacteria
(3) Fungi	Mosses
(4) Plantae	Algae

38. Which of the following is not a eukaryote?

(1) Rhizobium

(2) Amoeba

(3) Euglena

(4) Spirogyra

39. Pteridophytes differ from thallophytes and bryophytes in having.

(1) highly differentiated plant body

(2) true roots, stem & leaves

(3) well defined vascular system

(4) all of these

40. Which of the following does not hold true for fungi?

(1) They can be multicellular.

(2) They can be anaerobic.

(3) They can be autotrophic.

(4) They can be symbiotic.

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	1	2	4	4	2	4	2	4	1	2
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	3	4	1	2	4	2	3	3	3	2
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	2	3	1	3	4	1	3	2	2	1
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	4	4	4	3	3	2	3	1	4	3

9. AGRITOURISM, AGRIBUSINESS, PLANT & ANIMAL TISSUES, TISSUE CULTURE

1. Which of the following Institute has recently developed genetically-modified cotton varieties?
(1) G. B. Pant University of Agriculture and Technology
(2) Punjab Agricultural University
(3) Tamil Nadu Agricultural University
(4) Indian Agricultural Research Institute

2. Golden rice is a genetically modified crop plant where the incorporated genes are meant for biosynthesis of
(1) Vitamin A (2) Beta- Carotene
(3) Vitamin C (4) Vitamin E

3. What are GM crops?
(1) Genetically modified crops
(2) Genetically poor crops
(3) Nomadic crops
(4) Gene pool

4. Bt Cotton reduces use of -
(1) Pesticides (2) Seeds
(3) Manure (4) Fertilizers

5. 'Sabarmati' and 'Jamuna' are two new varieties of -
(1) Wheat (2) Rice
(3) Sorghum (4) Mustard

6. Which of these parts of a plant when used as explants in a tissue culture experiments the newly generated plants could be virus-free.
(1) Pollen
(2) Meristems
(3) Parts of the embryo
(4) Flower buds

7. HD2967 is the new high yielding variety of -
(1) Rice (2) Maize
(3) Mustard (4) Wheat

8. Which of these is the best definition of tissue culture?
(1) Ex vivo growth of cells or tissues in an aseptic and nutrient rich medium.
(2) The process or technique of making body tissue grow in a culture medium outside the organism.
(3) The cultivation of a plant through the use of a cutting or other plant tissue.
(4) A method of asexual propagation used by commercial growers to produce clones of a particular plant in large quantities.

9. Amflora is the genetically modified variety of
(1) Soyabean (2) Maize
(3) Tobacco (4) Potato

10. Detailed practical applications of the totipotency was shown by ---------- in 1932, who developed a complete carrot plant from a root cell .
(1) Frederick Steward (2) Hans Lippershey
(3) Carolus Linnaeus (4) Gregor Mendel

11. The techniques of bringing about improvements in living organisms by artificial genetic changes, and by hybridization for the welfare of human beings is called -
(1) Bioinformatics (2) Biotechnology
(3) Bacteriology (4) Anthropology

12. What is agritourism?
(1) Tourism in which tourists stay with local people in farms in rural areas abroad
(2) The business of attracting, accommodating, and entertaining tourists.
(3) Tourism directed towards exotic natural environments, intended to support conservation efforts and observe wildlife.
(4) The exploration of food as the purpose of tourism.

13. Which of these is an disadvantage of GM crops?
(1) Ability to withstand environmental stress
(2) Enhanced nutritive value
(3) Resistance to pests and pathogens.
(4) Disruption of biodiversity.

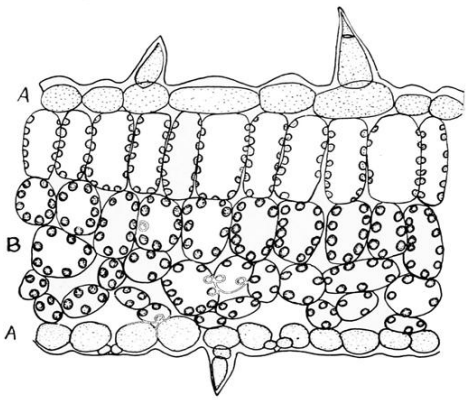
14. Find the odd one out with respect to GM foods:
(1) Cotton (2) Milk
(3) Soyabean (4) Sugar beet

15. The process of preparing plantlets to grow in a natural environment is called
(1) Hardening (2) Multiplication
(3) Culturing (4) Sterilization

16. Select the false statement with respect to importance of tissue culture:
(1) A large number of plants having dissimilar features to the parents can be produced by this method.
(2) Adult plants can be produced within a short period of time.
(3) Many plantlets can be produced without seeds.
(4) Healthy and disease free plants can be propagated by this technique.

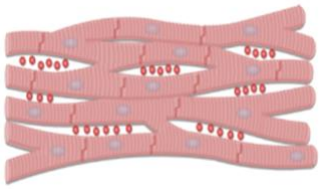
17. The types of meristematic tissues in plants includes
(1) apical meristems
(2) lateral meristems
(3) Intercalary meristems
(4) All of the above

18. In given figure, 'A ' represents the -



(1) Cuticle (2) Spongy tissue
(3) Epidermis (4) Stomata

19. The figure below represents -



(1) Cardiac muscle (2) Skeletal muscle
(3) Smooth muscles (4) None of these

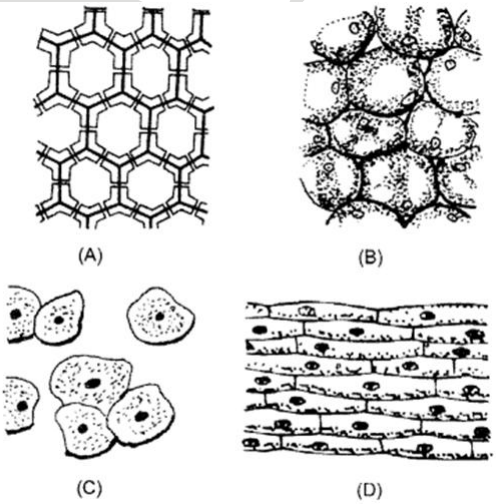
20. Which of the following is not made of epithelium?
(1) Inner layer of skin (2) Salivary gland
(3) Nose (4) Alveoli

21. ------- tissue supports internal organs.
(1) Cartilage (2) Glandular epithelium
(3) Adipose tissue (4) Areolar tissue

22. Which of the following is not a type of epidermal cell?
(1) Trichome (2) Root-hair
(3) Cork (4) Guard cell

23. In bones, ------ are found embedded in solid ground substance made of calcium phosphate.
(1) Chondrocytes (2) Erythrocytes
(3) Osteocytes (4) Leucocytes

24. Which of these is a Dead tissue?

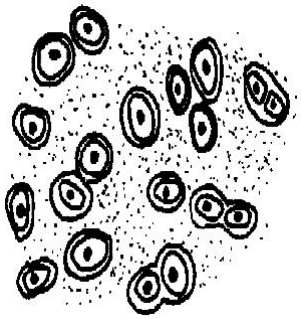


(1) A (2) B (3) C (4) D

25. Identify the cell shown in figure below

(1) Leucocyte (2) Erythrocyte
(3) Thrombocyte (4) Osteocyte

26. Observe the figure given below, and identify the type of tissue is found in nose, ear and larynx?



(1) Bone (2) Lymph
(3) Cartilage (4) Tendons

27. Which type of tissue forms glands?
(1) Epithelial (2) Connective
(3) Nervous (4) Muscle

28. The end of a long bone is connected to another bone by _____.
(1) ligament (2) tendon
(3) cartilage (4) muscle

29. Ligaments and tendons are formed of _____.
(1) Epithelial tissue (2) Muscular tissue
(3) Cartilage (4) Connective tissue

30. Fluid part of blood after removal of corpuscles is _____.
(1) plasma (2) lymph
(3) serum (4) vaccine

31. Sprain is caused by excessive pulling of _____.
(1) nerves (2) tendons
(3) muscles (4) ligaments

32. Tendon is a structure which connects _____.
(1) a bone with another bone
(2) a muscle with a bone
(3) a nerve with a muscle
(4) a muscle with a muscle

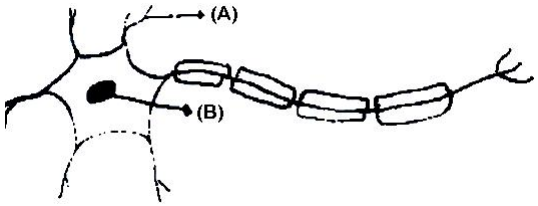
33. Smooth muscles occur in
(1) Alimentary canal (2) Artery
(3) Vein (4) All of these

34. Which of the following plant cell will show totipotency?

(1) Xylem vessels (2) Sieve tube

(3) Meristem (4) Cork cells

35. Identify "A" in the given figure



(1) Axon (2) Cell body

(3) Nucleus (4) Dendrite

36. Who is the father of tissue culture?

(1) Bonner (2) Haberlandt

(3) Laibach (4) Gautheret

37. Large-scale growth of plant cells in liquid culture inside ------- as a source of secondary products.

(1) Bioreactors (2) Nucleus

(3) Embryo (4) Nursery

38. The most common solidifying agent used in micropropagation is

(1) Agar (2) Potassium hydroxide

(3) sodium acetate (4) sodium nitrate

39. Hormone pair required for a callus to differentiate are

(1) auxin and cytokinin

(2) auxin and ethylene

(3) auxin and absiscic acid

(4) cytokinins and gibberellin

40. Totipotency means

(1) flowering in culture medium

(2) Development of a fruit from a flower in culture

(3) Development of an organ from a cell in culture medium

(4) All of these

41. ------ cannot germinate, but can easily be produced by tissue culture.

(1) Rice (2) Pitcher Plant

(3) Banana (4) Soyabean

42. Cybrids are produced by

(1) Fusion of two different nuclei from two different species

(2) Fusion of two same nuclei from same species

(3) Nucleus of one species but cytoplasm from both the parent species

(4) None of the above

43. Callus is

(1) Tissue that forms embryo

(2) An insoluble carbohydrate

(3) Tissue that grows to form embryoid

(4) Unorganised actively dividing mass of cells maintained in culture

44. Part of plant used for culturing in micropropagation is called

(1) Scion (2) Explant

(3) Stock (4) Callus

45. Which one of the microorganism is used for production of citric acid in industries ?

(1) *Lactobacillus bulgaricus*

(2) *Penicillium citrinum*

(3) *Aspergillus niger*

(4) *Rhizopus nigricans*

46. Important objective of biotechnology in agriculture section is

(1) To produce pest resistant varieties of plants

(2) To increase the nitrogen content

(3) To decrease the seed number

(4) To increase the plant weight

47. Which one of the following is a correct statement?

(1) "Bt" in "Bt-cotton" indicates that it is a genetically modified organism produced through biotechnology.

(2) Somatic hybridization involves fusion of two complete plant cells carrying desired genes.

(3) The anticoagulant hirudin is being produced from transgenic *Brassica napus* seeds.

(4) "Flavr Savr" variety of tomato has enhanced the production of ethylene which improves its taste.

48. DNA fingerprinting refers to :

(1) Techniques used for identification of finerprints of individuals.

(2) Molecular analysis of profiles of DNA samples.

(3) Analysis of DNA samples using imprinting devices.

(4) Techniques used for molecular analysis of different specimens of DNA.

49. Main source of stem cells in adults is

(1) Red bone marrow

(2) Adipose connective tissue

(3) Blood

(4) All of these

50. Removal of anthers from the female flower during plant hybridization is called

(1) Emasculation (2) Bagging

(3) Pollination (4) None of these

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	2	2	1	1	2	2	4	1	4	1
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	2	1	4	1	1	1	4	3	1	3
Q.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A.	4	3	3	1	2	3	1	1	4	1
Q.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A.	4	2	4	3	4	2	1	1	1	3
Q.	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
A.	3	3	4	2	3	1	3	2	4	1